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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/618,705	07/15/2003	Masahiro Kato	8048-1029	4913
⁴⁶⁵ YOUNG & THOMPSON 209 Madison Street Suite 500 ALEXANDRIA, VA 22314			<div>EXAMINER</div> <div>DANIELSEN, NATHAN ANDREW</div> <div>ART UNIT</div> <div>PAPER NUMBER</div> <div>2627</div> <div>MAIL DATE</div> <div>DELIVERY MODE</div>	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/618,705

Applicant(s)

KATO ET AL.

Examiner

Nathan Danielsen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 July 2008.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-13 is/are pending in the application.
4a) Of the above claim(s) 3 and 8-13 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1, 2, 4, 6 and 7 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/S508)
Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-4 and 6-13 are pending. Claims 3 and 8-13 have been withdrawn in response to applicant's election filed 08 January 2007. Claim 5 has been canceled in applicant's amendment filed 14 August 2007.

Claim Objections

2. Claims 1 and 7 are objected to because the second instance of "comprises" should be changed to --includes-- to further clarify where the preamble of each claim ends and where the body of each claim begins. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 2 and 4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claim 2 recites the limitation "the converter". Claim 4 recites the limitation "generating unit".

There is insufficient antecedent basis for these limitations in the claims.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1, 2, 4, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art (hereinafter the AAPA), in view of Okazaki et al (US Patent Application Publication

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2002/0105747; hereinafter Okazaki), and further in view of Seo (European Patent Application Publication 1 061 509).

Regarding claims 1 and 7, the AAPA discloses an information recording apparatus (and corresponding method) comprising:

- a light source which emits a recording light for information recording (page 1, lines 10-25);

- a recording waveform data generating unit which generates recording waveform data which is predetermined digital data corresponding to an input recording signal (page 1, lines 10-25);

- a D/A converting unit which D/A-converts the recording waveform data to generate a driving pulse signal (inherent in page 1, line 10 through page 2, line 3); and

- a driving unit which drives the light source to emit the recording light based on the driving pulse signal (page 1, line 10 through page 2, line 3).

However, the AAPA fails to disclose the details of the formation of the recording waveform data and the details of the recording waveform generating unit.

In the same field of endeavor, Okazaki discloses where:

- the recording waveform data is determined in accordance with characteristics of the light source, the driving unit and a combination thereof (¶¶s 3, 11, 34, and 50),

- the recording waveform data includes a level for suppressing at least one of an overshoot at a position corresponding to a position at which a waveform of the recording light emitted from the light source forms the overshoot and an undershoot at a position corresponding to a position at which a waveform of the recording light emitted from the light source forms the undershoot (¶¶s 34 and 50 and figure 2), and

- the recording waveform data generating unit includes an N-bit signal converting unit which converts pulse signals into N-bit waveform data to produce the recording waveform data (inherent in ¶¶s 29-45; where a microprocessor/controller must be used to generate the voltage signals A-H at the proper timing, as shown in figure 2, and where voltage signals A-H in figure 2 comprise 8-bit recording waveform).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the apparatus of the AAPA with the circuitry and functionality of Okazaki, for the purpose of minimizing the write time and overshoot period by controlling the rise and fall of a write current (§ 14). However, AAPA and Okazaki also fail to disclose where the recording waveform data generating unit includes a strategy signal generating unit which generates a recording strategy signal based on the input recording signal and strategy information.

In the same field of endeavor, Seo discloses where the recording waveform data generating unit includes a strategy signal generating unit which generates a recording strategy signal based on the input recording signal and strategy information (§ 123).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the apparatus of the AAPA and Okazaki with that of Seo for the purpose of enabling accurate recording control by updating the light output control data for the power setting values as the output characteristics of a laser diode change (§ 131).

Regarding claims 2 and 4, AAPA and Okazaki fail to disclose the details of a storing unit and the converting unit.

In the same field of endeavor, Seo discloses where the recording waveform data generating unit further comprises:

a storing unit which stores predetermined waveform data determined in accordance with the characteristics of the light source, the driving unit and the combination thereof, for pulse waveforms of plural pulse widths (power table storing units 504 and 508 in figure 5 and § 123); and

the converting unit obtaining the waveform data corresponding to the pulse waveform forming the recording strategy signal from the storing unit to produce the recording waveform data (§s 119-123),

wherein the storing unit stores the waveform data for each of a recording power which is a power of a recording light emitted from the light source in recording, and the generating unit

refers to the storing unit according to a recording power to be utilized and generates the recording waveform data (§§ 102-106).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the apparatus of the AAPA and Okazaki with that of Seo for the purpose of enabling accurate recording control by updating the light output control data for the power setting values as the output characteristics of a laser diode change (§ 131, Seo).

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over the AAPA, in view of Okazaki and Seo, and further in view of Masaki et al (US Patent 5,732,055; hereinafter Masaki).

Regarding claim 6, the AAPA, in view of Okazaki and Seo, discloses everything claimed, as applied to claim 1. However, the AAPA, in view of Okazaki and Seo, fail to disclose means for compensating for level tilt.

In the same field of endeavor, Masaki discloses where the recording waveform data has a level for canceling a level tilt in a case that a waveform of a recording light emitted from the light source has the level tilt (col. 26, lines 16-46).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the apparatus of the AAPA, in view of Okazaki and Seo, with that of Masaki, for the purpose of efficiently performing a light emission adjustment without exerting a burden on a laser diode (col. 2, lines 59-62, Masaki).

Response to Arguments

9. Applicant's arguments filed 15 July 2008 have been fully considered but they are not persuasive.
- a. Regarding applicant's argument that the prior art of record fails to disclose the details of the claimed waveform data generating unit, the examiner disagrees. Contrary to applicant's assertion that Okazaki fails to disclose the N-bit signal converting unit, Okazaki discloses an N-bit signal converting unit, as shown in figure 1, where $N = 8$ (voltage signals A-H), where the transistors illustrated in figure 1 would also comprise a D/A converter, converting the digital

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voltage signals A-H to an analog signal. Therefore, the rejection using the AAPA, in view of Okazaki and Seo, is still deemed proper and is hereby maintained.

Citation of Relevant Prior Art

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
 - a. Lewyn (US Patent 6,297,759) discloses a DAC unit for converting input data, consisting of N-bit words, into analog output data while minimizing output voltage spikes caused by conversion errors in the analog output.

Closing Remarks/Comments

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan Danielsen whose telephone number is (571)272-4248. The examiner can normally be reached on Monday-Friday, 9:00 AM - 5:00 PM Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, A.L. Wellington can be reached on (571) 272-4483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Andrea L Wellington/
Supervisory Patent Examiner, Art Unit
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Nathan Danielsen
11/07/2008